

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa, the method comprising: using process gases of two components, a raw gas (A) and a reactive oxidizing gas (B);
~~discharge processing the process gas (B) out of the process gases (A) and (B) of two components; and joining the process gas (A) not discharge processed with said process gas (B) discharge processed~~passing the raw gas (A) through a non-discharge space and emitting the raw gas (A) to the surface of a substrate;
passing the oxidizing gas (B) between a pair of opposite electrodes arranged on both sides of the non-discharge space, discharge processing the oxidizing gas (B) at a pressure of 1.0×10^4 Pa and emitting the oxidizing gas (B) to the surface of a substrate from both sides of the raw gas (A);
and joining the oxidizing gas (B) discharge processed with the raw gas (A) in the vicinity of the surface of a substrate to mix them.

2. (canceled).

3. (currently amended): A method for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa, the method comprising: using process gases of three components, a raw gas (A), a reactive gas (B) and a H_2O gas (C);

passing the raw gas (A) through a non-discharge space and emitting the raw gas (A) to the surface of a substrate;

passing the reactive gas (B) between a pair of opposite electrodes arranged on both sides of the non-discharge space, discharge processing the reactive gas (B) at a pressure of 1.0×10^4 Pa and emitting the reactive gas (B) to the surface of a substrate from both sides of the raw gas (A);

passing the H_2O gas (C) between a pair of opposite electrodes arranged on both sides of the non-discharge space, discharge processing the H_2O gas (C) at a pressure of 1.0×10^4 Pa and emitting the H_2O gas (C) to the surface of a substrate from both sides of the raw gas (A);

and joining the reactive gas (B) and the H_2O gas (C) discharge processed with the raw gas (A) individually discharge processing the process gas (B) and process gas (C) out of the process gases (A) to (C) of three components; and joining the process gas (A) not discharge processed with said process gas (B) and process gas (C) discharge processed in the vicinity of the surface of a substrate to mix them.

4. (currently amended): A method for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa, the method comprising: using process gases of three components, a raw gas (A), a reactive gas (B) and a H_2O gas (C);

~~discharge processing a mixed gas having the process gas (B) and process gas (C) mixed out of the process gases (A) to (C) of three components; and joining the process gas (A) not discharge processed with said mixed gas discharge processed in the vicinity of the surface of a substrate to mix them~~
passing the raw gas (A) through a non-discharge space and emitting the raw gas (A) to the surface of a substrate;

passing a mixed gas having the reactive gas (B) and the H₂O gas (C) mixed between a pair of opposite electrodes arranged on both sides of the non-discharge space, discharge processing the mixed gas at a pressure of 1.0×10^4 to 11×10^4 Pa and emitting the mixed gas to the surface of a substrate from both sides of the raw gas (A);

and joining the mixed gas discharge processed with the raw gas (A) in the vicinity of the surface of a substrate to mix them.

5. (currently amended): A method for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa, the method comprising: using process gases of three components, a raw gas (A), a reactive gas (B) and a H₂O gas (C);

passing a mixed gas having the raw gas (A) and the H₂O gas (C) mixed through a non-discharge space and emitting gas to the surface of a substrate;

passing the reactive gas (B) between a pair of opposite electrodes arranged on both sides of the non-discharge space, discharge processing the reactive gas (B) at a pressure of 1.0×10^4 Pa and emitting the reactive gas (B) to the surface of a substrate from both sides of the mixed gas;

and joining the reactive gas (B) discharge processed with the mixed gas discharge processing the process gas (B) out of the process gases (A) to (C) of three components; and joining a mixed gas of the process gas (A) and process gas (C) not discharge processed with said process gas (B) discharge processed in the vicinity of the surface of a substrate to mix them.

6. (currently amended): An oxide film forming method according to any of claims 1, 3 to 5, wherein said raw gas (A) is a silicon-contained gas.

7. (currently amended): An oxide film forming method according to any of claims ~~2~~3 to 5, wherein said reactive gas (B) is an oxidizing gas .

8. **(currently amended):** An oxide film forming method according to any of claims 1, 3 to 5, further comprising a gas supply source for supplying a process gas called a phosphorus-contained gas and / or a boron-contained gas (D), wherein the process gas (D) is mixed with the ~~process-raw~~ gas (A) for use.

9. **(canceled).**

10. **(currently amended):** An oxide film forming method according to any of claims 1, 3 to 5, wherein by an exhaust mechanism, exhaust control is carried out so that said joined gas forms a gas flow flowing along the surface to be processed of a substrate.

11. **(currently amended):** An oxide film forming method according to any of claims 1, 3 to 5, wherein the total flow rate of introductory flow rates of said raw gas and said reactive gas is approximately the same as the flow rate of the gas flow flowing along the surface to be processed of a substrate.

12. **(currently amended):** An apparatus for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa,

the apparatus comprising: a gas supply source for supplying process gases of two components, a raw gas (A) and a reactive oxidizing gas (B);

a gas introducing portion which defines a non-discharge space;

and a discharge processing section which defines a discharge space between a pair of opposite electrodes arranged on both sides of the gas introducing portion;

wherein the raw gas (A) is passed through a non-discharge space defined by the gas introducing portion and is emitted to the surface of a substrate;

the reactive oxidizing gas (B) is passed through a discharge space defined by a discharge processing section, is discharge processed at a pressure of 1.0×10^4 to 11×10^4 Pa and is emitted to the surface of a substrate from both sides of the raw gas (A);

and the reactive oxidizing gas (B) discharge processed is joined with the raw gas (A) in the vicinity of the surface of a substrate to mix them ~~and a discharge processing section, wherein the process gas (B) out of the process gases (A) and (B) of two components is subjected to discharge processing by the discharge processing section; and the process gas (A) is joined, in the vicinity of the surface of a substrate, without discharge processing, with the process gas (B) discharge processed to mix them, in the discharge processing section.~~

13. (canceled).

14. (currently amended): An apparatus for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa,

the apparatus comprising: a gas supply source for supplying process gases of three components, a raw gas (A), a reactive gas (B) and a H_2O gas (C),

a gas introducing portion which defines a non-discharge space;

and a discharge processing section which defines a discharge space between a pair of opposite electrodes arranged on both sides of the gas introducing portion;

wherein the raw gas (A) is passed through a non-discharge space defined by the gas introducing portion and is emitted to the surface of a substrate;

the reactive gas (B) is passed through a discharge space defined by a discharge processing section, is discharge processed at a pressure of 1.0×10^4 to 11×10^4 Pa and is emitted to the surface of a substrate from both sides of the raw gas (A);

~~and the reactive gas (B) discharge processed is joined with the raw gas (A) and a discharge processing section, wherein the process gas (B) and process gas (C) out of the process gases (A) to (C) of three components are subjected to discharge processing in individual discharge processing section, and the process gas (A) is joined, without discharge processing, with said process gas (B) and process gas (C) discharge processed in the vicinity of the surface of a substrate to mix them.~~

15. (currently amended): An apparatus for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa,

the apparatus comprising: a gas supply source for supplying process gases of three components, a raw gas (A), a reactive gas (B) and a H_2O gas (C);

~~and a discharge processing section, wherein a mixed gas having the process gas (B) and process gas (C) mixed out of the process gases (A) to (C) of three components is subjected to discharge processing by the discharge processing section; and the process gas (A) is joined, in the vicinity of the surface of a substrate, without discharge processing, with the mixed gas discharge processed to mix them~~

a gas introducing portion which defines a non-discharge space;

and a discharge processing section which defines a discharge space between a pair of opposite electrodes arranged on both sides of the gas introducing portion;

wherein the raw gas (A) is passed through a non-discharge space defined by the gas introducing portion and is emitted to the surface of a substrate;

a mixed gas having the reactive gas (B) and the H_2O gas (C) mixed is passed through a non-discharge space defined by a discharge processing section, is discharge processed at a

pressure of 1.0×10^4 to 11×10^4 Pa and is emitted to the surface of a substrate from both sides of the raw gas (A);

and the mixed gas discharge processed is joined with the process gas (A) in the vicinity of the surface of a substrate to mix them.

16. (currently amended): An apparatus for forming an oxide film on the surface of a substrate by a CVD method at a pressure of 1.0×10^4 to 11×10^4 Pa,

the apparatus comprising: a gas supply source for supplying process gases of three components, a raw gas (A), a reactive gas (B) and a H_2O gas (C),

~~and a discharge processing section, wherein the process gas (B) out of the process gases (A) to (C) of three components is subjected to discharge processing in the discharge processing section; and the mixed gas of the process gas (A) and the process gas (C) is joined, in the vicinity of the surface of a substrate, without discharge processing, with the process gas (B) discharge processed to mix them~~a gas introducing portion which defines a non-discharge space;

and a discharge processing section which defines a discharge space between a pair of opposite electrodes arranged on both sides of the gas introducing portion;

wherein a mixed gas having the raw gas (A) and the H_2O gas (C) mixed is passed through a non-discharge space defined by the gas introducing portion and is emitted to the surface of a substrate;

the reactive gas (B) is passed through a discharge space defined by a discharge processing section, is discharge processed at a pressure of 1.0×10^4 to 11×10^4 Pa and is emitted to the surface of a substrate from both sides of the raw gas (A)

and the raw gas (A) discharge processed is joined with the mixed gas in the vicinity of the surface of a substrate to mix them.

17. (currently amended): An oxide film forming apparatus according to any of Claims 12, 14 to 16, wherein said raw gas (A) is a silicon-contained gas.

18. (currently amended): An oxide film forming apparatus according to any of claims ~~13~~ 14 to 16, wherein said reactive gas (B) is an oxidizing gas.

19. (currently amended): An oxide film forming apparatus according to any of claims ~~13~~ 14 to 16, wherein the quantity of said ~~process-reactive~~ gas (B) out of the process gases used in the CVD method is in excess of 50 weight % of the whole process gas, and the weight ratio between said ~~process-raw~~ gas (A) and said ~~process-H₂O~~ gas (C) [~~process-raw~~ gas (A) / ~~process-H₂O~~ gas (C)] is 1/100 to 1/0.02.

20. (currently amended): An oxide film forming apparatus according to any of claims ~~13~~ 14 to 16, wherein a supplying total of process gases of said three components is 1 to 300 SLM.

21. (currently amended): An oxide film forming apparatus according to any of claims 12, 14 to 16,

further comprising a gas supply source for supplying a process gas called a phosphorus-contained gas and / or a boron-contained gas (D), wherein the process gas (D) is mixed with the ~~process-raw~~ gas (A) for use.

22. (currently amended): An oxide film forming apparatus according to any of claims 12, 14 to 16,

wherein a distance between said discharge processing section and the surface of a substrate placed on a substrate place section is 0.5 to 30 mm.

23. (currently amended): An oxide film forming apparatus according to any of claims 12, 14 to 16, wherein a substrate place section for placing the substrate and said

discharge processing section are moved relatively in one direction or in both directions whereby the substrate can be carried one way or return relatively, a gas emitting port of the process gas not discharge processed is arranged in the midst of the substrate carrying course, and gas emitting ports of the process gas discharged processed are arranged forward and backward with respect to the substrate carrying direction of said first mentioned gas emitting port.

24. (original): An oxide film forming apparatus according to Claim 23, wherein the process gas discharge processed emitted from said gas emitting ports arranged forward and backward with respect to the substrate carrying direction is the same process gas.

25. (currently amended): An oxide film forming apparatus according to any of claims 12, and 14 to 16, comprising an exhaust mechanism for exhaust controlling the direction in which a joined gas of said reactive gas and said raw gas flows.

26. (original): An oxide film forming apparatus according to Claim 25, wherein said exhaust mechanism is arranged on the side close to the plasma space on the side at a distance of a flow passage of the joined gas from a place where said reactive gas and said raw gas are joined.

27. (withdrawn): An oxide film forming apparatus according to Claim 25, wherein said exhaust mechanisms are arranged on both sides of said joined place, and the conductance of the flow passage on the side close to the plasma space, out of the joined gas flow passages from the joined place to the exhaust mechanism, is small.

28. (previously presented): An oxide film forming apparatus according to claim 25, wherein there is provided a gas flow regulating plate for forming a joining gas flow passage along the surface to be processed.

29. (previously presented): An oxide film forming apparatus according to Claim 28, wherein said gas flow regulating plate is a ceramic porous gas flow regulating plate, and an inert gas is emitted from said gas flow regulating plate.

30. (currently amended): An oxide film forming ~~apparatus~~method according to any of claims ~~2-3~~ to 5, where the quantity of said process gas (B) out of the process gases used in the CVD method is in excess of 50 weight% of the whole process gas, and the weight ratio between said ~~process-raw~~ gas (A) and said ~~process~~-H₂O gas (C) [~~process-raw~~ gas (A)/ ~~H₂O~~process gas (C)] is 1/100 to 1/0.02.